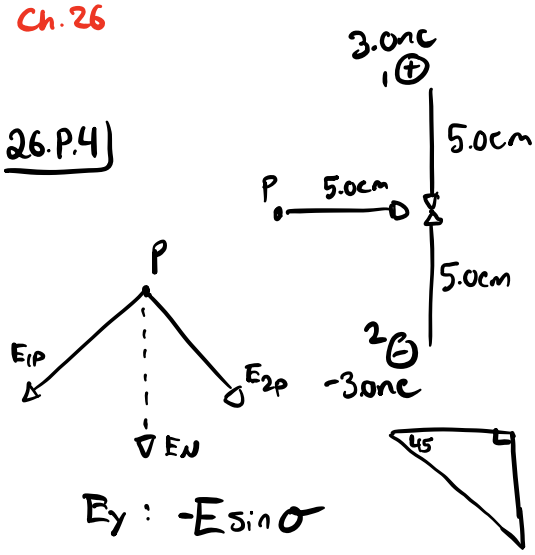
P: 4,6
CQ: 2
Ch. 26

26.P.4



$r = 7.071$

$E = \frac{kq}{r^2}$

E_{1P}: $q = 3.0nC$, $k = 8.99\times10^9 \frac{Nm^2}{C^2}$, $r = 7.071\,cm$ → $E_{1P} = 5{,}394\ N/C$

E_{2P}: $q = -3.0nC$, $k = 8.99\times10^9 \frac{Nm^2}{C^2}$, $r = 7.071cm$ → $E_{2P} = 5{,}394\ N/C$

E_y: $-E\sin\theta$

$E_y = 3814.13\ N/C\ (-\hat{j})$

$E_n = 2E_y$

$E_n = 7.63\times10^3\ (-\hat{j})\ N/C$

26.P.6

a.)

$E = \frac{2k\bar{P}}{r^3}$

$r = 10\times10^{-2}m$

$E = 360\ N/C$

$S = 1.0\times10^{-2}m$

$k = 8.99\times10^9 \frac{Nm^2}{C^2}$

$\frac{r^3E}{2k} = qS$

$q = \frac{r^3E}{2kS}$

$q = 2nC$

b.) $E = \frac{-k\bar{P}}{r^3}$

$E = \frac{-k(qS)}{r^3}$

$q = 2nC$

$S = 1.0\times10^{-2}m$

$r = 10\times10^{-2}m$

$E = -180\ N/C$

$q = 2nC$

$E = -180\ N/C$